OPTOISOLATED INPUT AND RELAY OUTPUT DIGITAL I/O PC/104 MODULE

OPAL-MM

OPAL-MM features 8 optoisolated digital inputs and 8 relay outputs. Each input can accept both AC and DC voltages as low as 3V and as high as 28V. An input range of 3DV or higher is available via special order. An on-board input filter circuit allows the sensing of AC inputs with 40Hz or greater frequency. The presence of an appropriate AC input signal will generate a DC signal at the output that can be read by the computer. This filter circuit is selectable on a channel by channel basis.

The 8 relay outputs are SPDT format (form C). Each relay has 3 contacts: Common, Normally Open and Normally Closed. For safety and reliability, all relays are at their power-off state at power-up or system reset. Each relay can switch both AC and DC voltages.

The relays have long lifetime (10,000,000 operations) and quick actuation time (5ms max operate and release). A single 40-pin I/O header is used for all I/O.

FEATURES

- 8 optoisolated digital inputs
- 8 spot relay (form C) outputs
- DC inputs 3 - 28V
- AC inputs 3 - 28V, 40Hz or greater
- Long lifetime relays (10,000,000 operations)
- 500VAC or DC isolation between board and signals

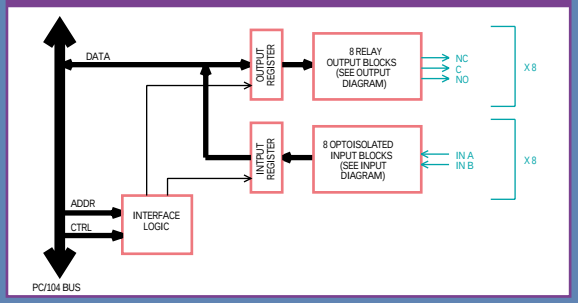
Signal Isolation

Opal-MM provides 500V DC or AD isolation between all I/O connections and the rest of the board. This specification does not apply between I/O channels, although all channels are isolated from each other as well. In many applications, the I/O points share a common power or ground line and require only isolation between the I/O lines as a group and the control circuitry.

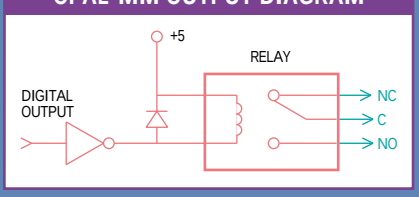
I / O HEADERS

OUT 7 C	1	2	OUT 6 C
OUT 7 NC	3	4	OUT 6 NC
OUT 7 NO	5	6	OUT 6 NO
OUT 5 C	7	8	OUT 4 C
OUT 5 NC	9	10	OUT 4 NC
OUT 5 NO	11	12	OUT 4 NO
OUT 3 C	13	14	OUT 2 C
OUT 3 NC	15	16	OUT 2 NC
OUT 3 NO	17	18	OUT 2 NO
OUT 1 C	19	20	OUT 0 C
OUT 1 NC	21	22	OUT 0 NC
OUT 1 NO	23	24	OUT 0 NO
IN 7 A	25	26	IN 7 B
IN 6 A	27	28	IN 6 B
IN 5 A	29	30	IN 5 B
IN 4 A	31	32	IN 4 B
IN 3 A	33	34	IN 3 B
IN 2 A	35	36	IN 2 B
IN 1 A	37	38	IN 1 B
IN 0 A	39	40	IN 0 B

OPAL-MM BLOCK DIAGRAM

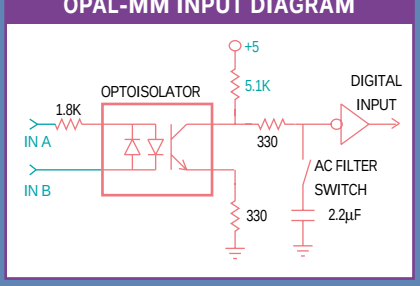


OPAL-MM OUTPUT DIAGRAM



(shown with digital output bit = 0)

OPAL-MM INPUT DIAGRAM



SPECIFICATIONS

Optoisolated Inputs		
Inputs		8 nonpolarized optoisolators
Input volt.	DC inputs:	3V min, 28V max, not polarized
	AC inputs:	3V p-p min, 28V p-p max, 40Hz or greater
Input switch time		100ms max
Input impedance		1.8KΩ min
AC input filter		Selectable on a per-channel basis
Relay Outputs		
Outputs		8 relays
Relay type		SPDT (Form C)
Max power	DC:	30VDC / 1A
	AC:	125VAC / 0.1A resistive, 125VAC / 0.2A inductive
Max switching cap.		30W (DC), 50VA (AC)
Max operating voltage		220VDC, 250VAC
Contact resistance		50mΩ max
Relay lifetime		10,000,000 operations
Actuation time		5ms max, operate or release
General		
I/O header		2 x 20 pin header; on .1" centers
Mating Cable		DSC #C-40-18
Isolation (all I/O)		500VDC or AC, input to board or board to output
Power supply		+5VDC ±10%
Current consumption		200mA typical, all relays off; Additional 40mA per activated relay
Operating temp.		-20 to +70°C
Weight		3.0oz / 85g

Diamond Point International (Europe) Ltd
Suite 13, Ashford House, Beaufort Court
Sir Thomas Longley Road, Rochester, Kent, ME2 4FA, UK
Phone 01634 300900 - Fax 01634 722398 - Email sales@dpie.com – Web www.dpie.com

www.dpie.com